

FIG 1

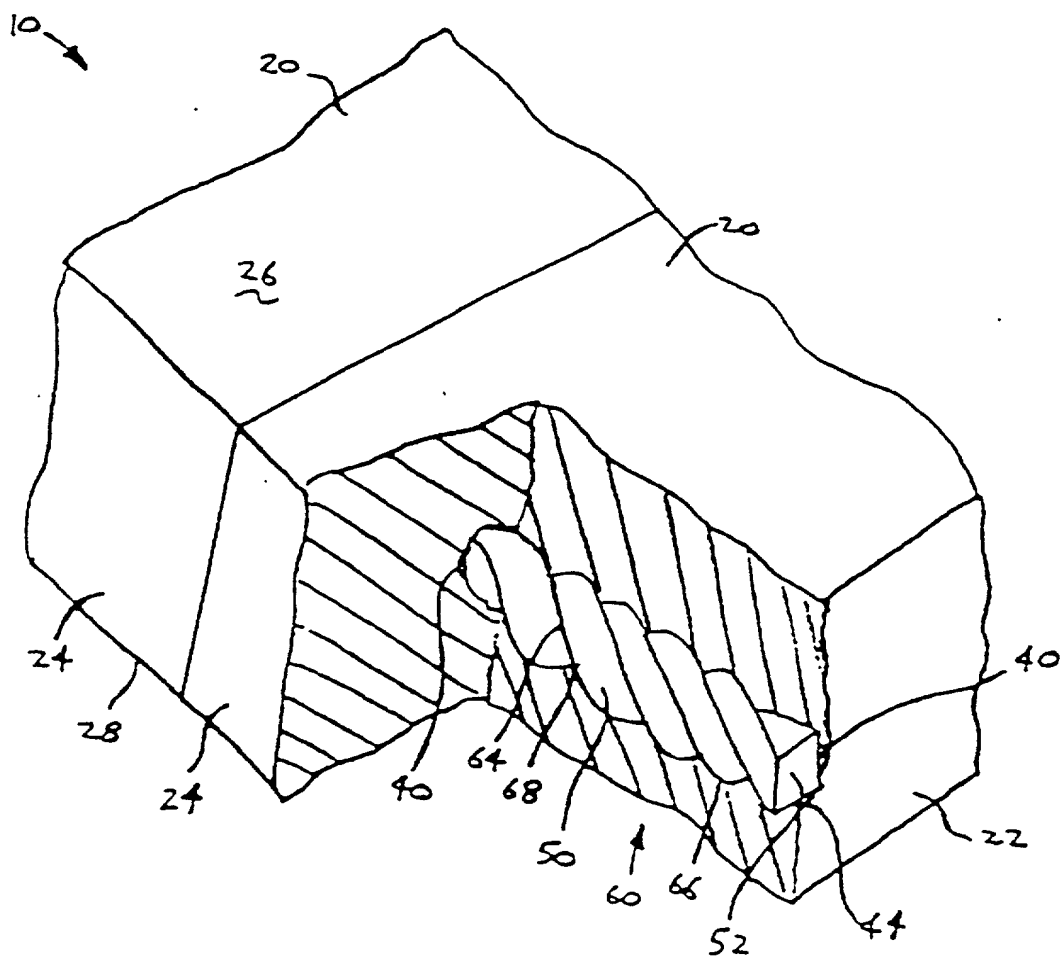


FIG. 2

100

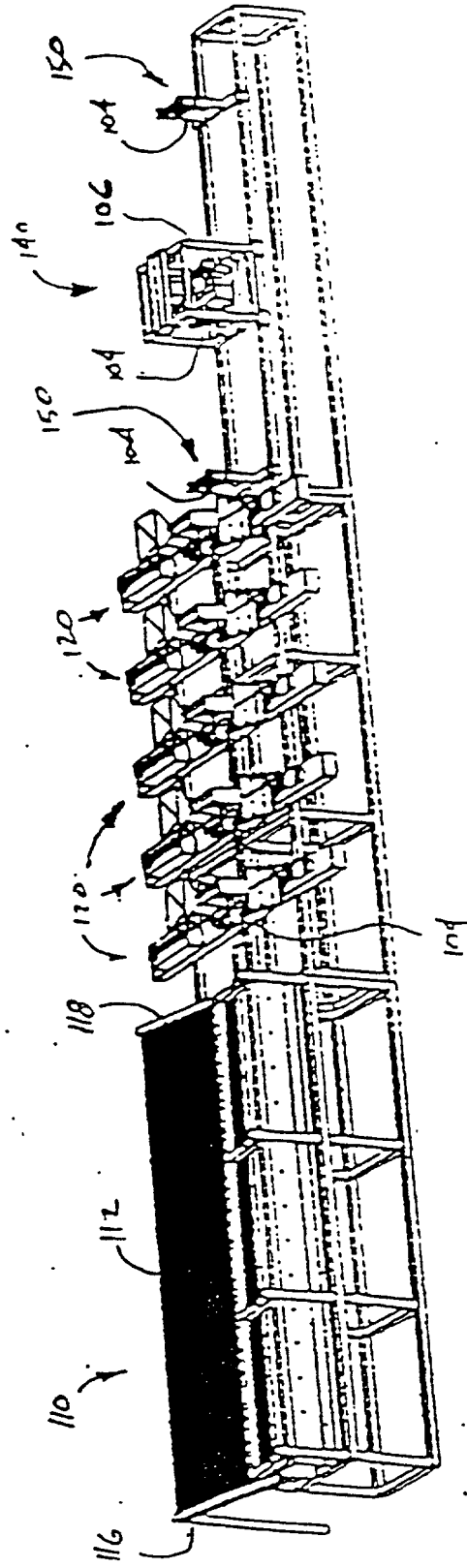


FIG. 3

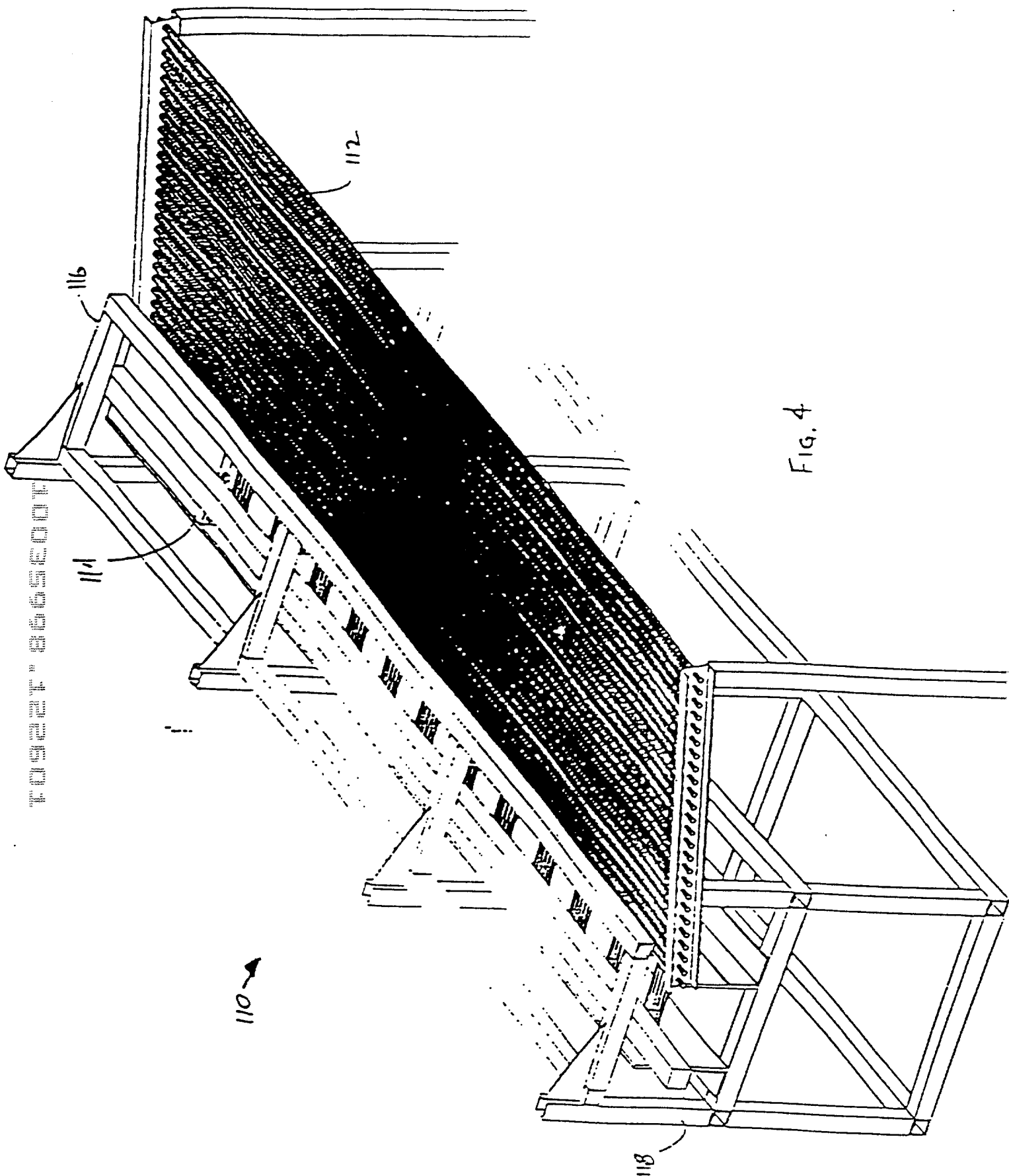


FIG. 4

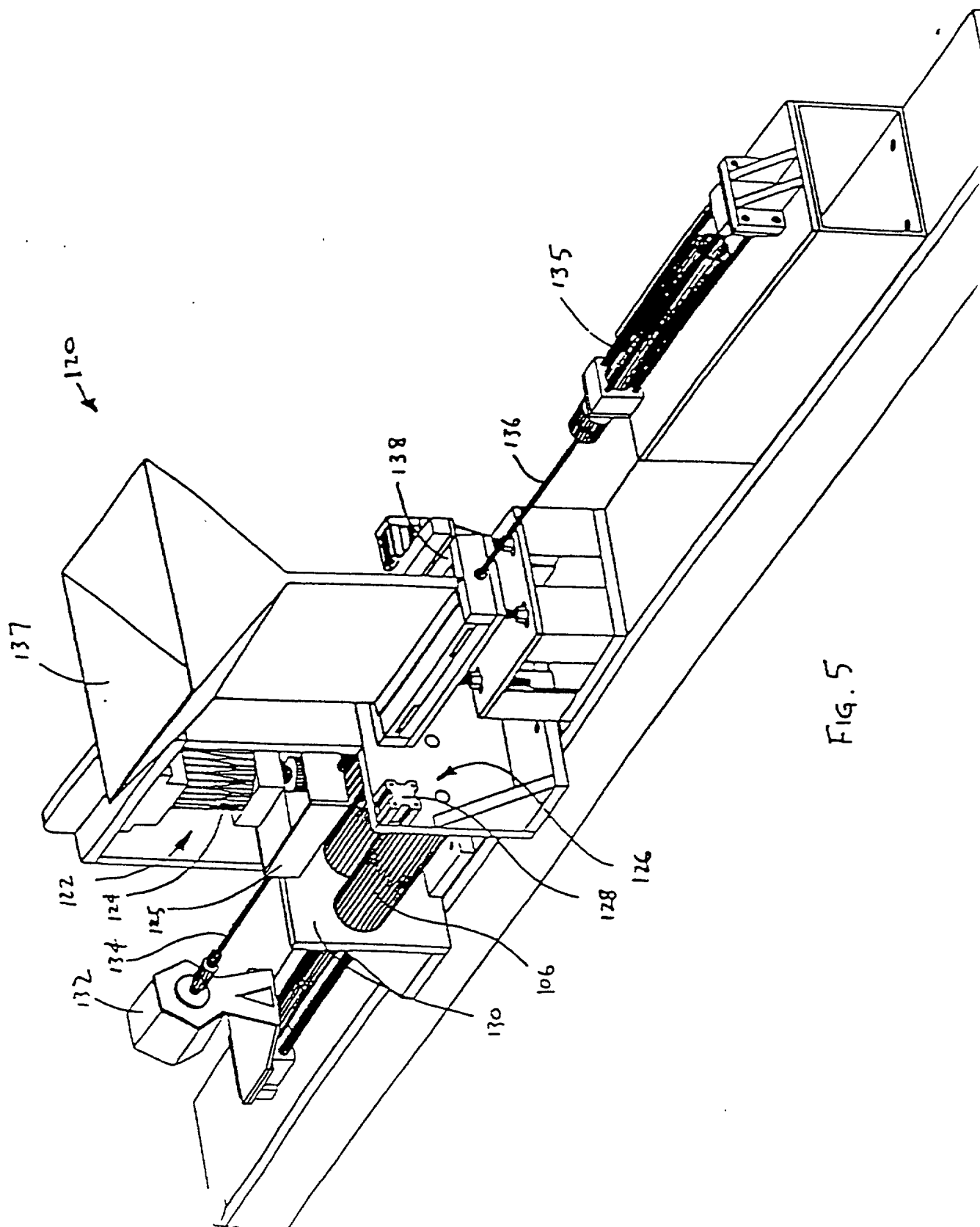


FIG. 5

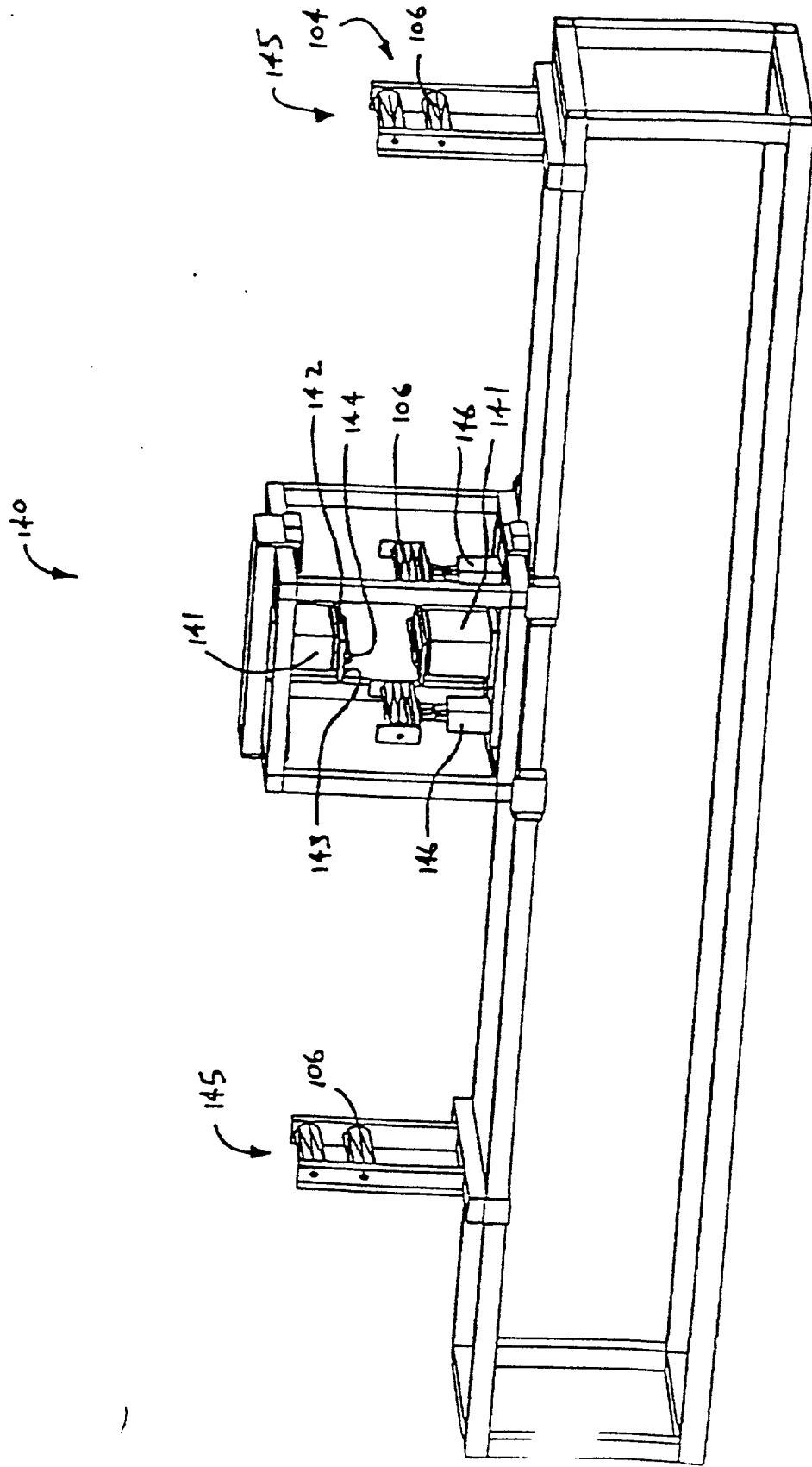


FIG. 6

| HEE S/N | Side | Date Marked on Board | Test 1 Deflection @ 500 lbs, in. | Test 2 Deflection 1 Board @ 500 lbs, in. | Test 3 Max Load, lbs/Deflection/Failure |
|------------|------|----------------------------|--|--|--|
| 1 | A | 12-94 | 1.975 | 2.282 | 1527 lbs/6.385"/simple tension |
| 1 | B | 12-94 | 2.002 | 2.034 | |
| 2 | A | 12-94 | 2.378 | 2.308 | 1648 lbs/7.760"/full deflection reached with no failure |
| 2 | B | 12-94 | 2.508 | 2.271 | |
| 3 | A | 12-94 | 2.157 | 2.124 | 1652 lbs/6.844"/simple tension |
| 3 | B | 12-94 | 1.996 | 2.051 | |
| 4 | A | 11-94 | 2.002 | 2.174 | 1774 lbs/7.438"/full deflection reached with no failure |
| 4 | B | 11-94 | 2.005 | 2.112 | |
| 5 | A | 11-94 | 1.594 | N/A | 2147 lbs/6.785"/cross-grain tension failure |
| 5 | B | 11-94 | 1.810 | N/A | |
| 6 | A | 11-94 | 1.914 | N/A | 1009 lbs/4.275"/simple tension |
| 6 | B | 11-94 | 2.081 | N/A | |

Fig. 7

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Figure 8

| COMPARISON RESULTS | | | |
|-------------------------|-------------------|-------------------|--------------------|
| | Pinned | Solid | Laminated |
| Modulus of Elasticity | 2.0×10^6 | 1.8×10^6 | 2.15×10^6 |
| Flexural Stress | 2,600 psi | 2,200 psi | 2,900 psi |
| Horizontal Sheer Stress | 120 psi | 90 psi | 145 psi |

Figure 9

| FAILURE RESULTS | | |
|-----------------|----------------------------|------------------------------------|
| Type of Board | Average Failure Load (lbs) | Comments |
| Pinned | 2,700 psi | One member out of three fail first |
| Solid | 2,200 psi | Whole unit fails |
| Laminated | 2,400 psi | Whole unit fails |

Figure 10

| DEFLECTION RESULTS | | |
|------------------------------|----------------------------------|--------------------------------|
| Type of Board (7 ft span) | Deflection @ 50 psf Load (in) | OSHA Allowable Deflection (in) |
| Pinned | 0.73 | 1.4 |
| Solid | 0.81 | 1.4 |
| Laminated | 0.73 | 1.4 |